CLAIMS

What we claim as our invention:

1. A system for the treatment of effluent gases from a semiconductor device manufacturing process, the system comprising:

(a) a burn/wet scrubber for receiving a flow of effluent gas containing a toxic constituent and for producing a flow of treated gas and a flow of waste-water containing the toxic constituent; and

(b) a local waste water treatment unit associated with the burn/wet scrubber for receiving the flow of wastewater containing the toxic constituent and for producing a flow of locally treated wastewater from which the toxic constituent has been abated.

2. The system of claim 1 further comprising a plurality of burn/wet scrubbers in fluid communication with a single local wastewater treatment unit.

3 ~~(a)~~ The system of claim 1 wherein said wastewater treatment unit includes an ion exchange filter.

4 ~~3.~~ The system of claim 3 wherein said toxic constituents include arsine and germanium by-products produced from a chemical vapor deposition process and said ion exchange filter abates the concentration said arsine and germanium in the wastewater.

5 ~~4.~~ The system of claim 1 and including a central wastewater treatment facility for receiving and further treating the locally treated wastewater.

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5. The system of claim 1 further comprising a plurality of burn/wet scrubbers and a plurality of wastewater treatment units wherein each burn/wet scrubbers is in fluid communication with a corresponding wastewater treatment unit, and each said wastewater treatment unit is in fluid communication with the central wastewater treatment facility.

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6. A method for the abatement of toxic constituents of effluent gases discharged during the manufacture of semiconductor devices, the method comprising the steps of:

(a) oxidizing the toxic constituents of the effluent gases;

(b) condensing the oxidized toxic constituents with water; and

(c) abating condensed toxic constituents from water used to condense the oxidized toxic constituents.

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7. The method of claim 7 wherein said step of abating the toxic constituents from the water includes providing an ion exchange filter for the filtration of toxic constituents from the water.

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8. The method of claim 7 wherein the steps of oxidizing the toxic constituents and condensing the oxidized toxic constituents take place at a plurality of locations during the manufacture of the semiconductor devices.

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9. The method of claim 7 and including the step of directing the water to a central wastewater treatment facility after the abatement of the toxic constituents.

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10. The method of claim 10 wherein said step of abating the toxic constituents from the water includes providing a plurality of ion exchange filters for the filtration of toxic compounds from the water, before the water is directed to the central wastewater treatment facility.

11. A method of abatement of toxic constituents in the effluent from a semiconductor device manufacturing process, the method comprising:

(a) treating a flow of effluent gas containing a toxic constituent in a burn/wet scrubber to produce a flow of treated gas and a flow of wastewater containing the toxic constituent; and,

(b) locally treating the flow of wastewater containing the toxic constituent to produce a flow of locally treated wastewater from which the toxic constituent has been abated.

12. The method of claim 10 further including the step of treating the wastewater in a central wastewater treatment facility subsequent to said step of locally treating the wastewater.

13. The method of claim 10 wherein said step of locally treating the wastewater includes flowing the wastewater through an ion exchange filter.